Utah Department of Transportation Traffic Management Division

March 2016

Monthly Report

2060 South 2760 West Salt Lake City, Utah 84104 801-887-3710 www.udottraffic.utah.gov

Mission of the Traffic Management Division

- To Support UDOT and the Department of Public Safety to Achieve Zero Fatalities.
- To Help Provide Reliable and Efficient Travel Throughout Utah.
- To Provide Useful and Timely Real-time Traffic Information.
- To Work Together with Other Government Agencies to Serve the Public.
- To Provide Excellent Customer Service.

Field Devices Summary

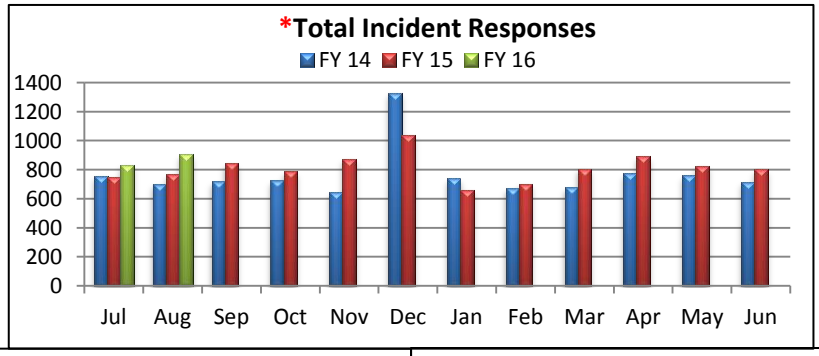
Freeway PTZ Cameras	385	Freeway VMS	97
Arterial PTZ Cameras	468	Surface Street VMS	51
RWIS & Contracted Weather Cameras	216	Portable TOC VMS	7
Viewable Detection Cameras	59	Legacy Trucks Prohibited VMS	21
Total Cameras	1,128	Variable Speed Limit VMS	15
HAR (27 permanent/5 portable)	32	Chain-Up/Avalanche Warning Signs	21
RWIS	96	Total VMS	212
Ramp Meters	63	TMS	540
Express Lane Plazas	73	Traffic Signals	2,139

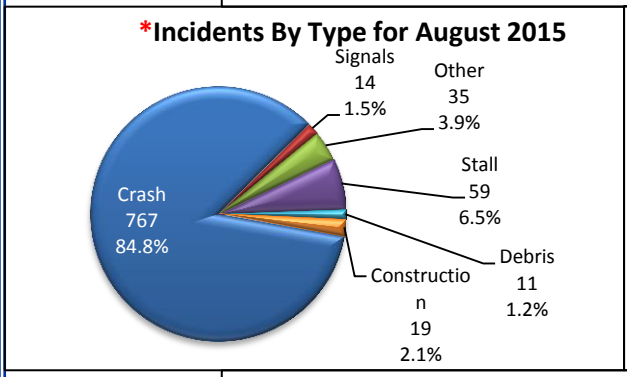
Operations Summary

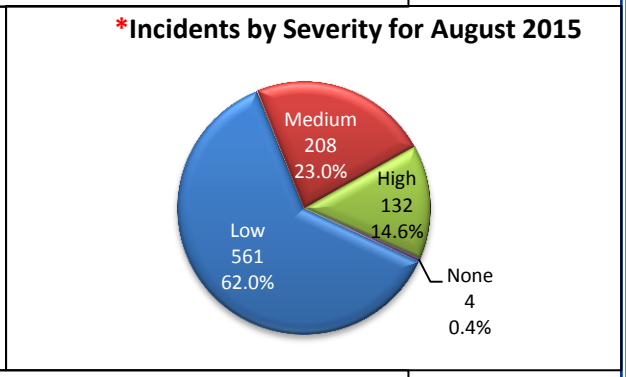
VMS Messages Displayed	84,041	IMT Assists	2,070
Signal Timing Work Orders	31	Website Visitor Sessions	189,766
Signal Maintenance Work Orders	156	511 Calls	21,326
All New Work Orders	457	Weather Desk Calls	492
Incident Responses by the TOC	905	Ask CommuterLink Questions	93
Incident Duration Average Minutes	58	UDOT Traffic Followers and Re-tweets	472,069

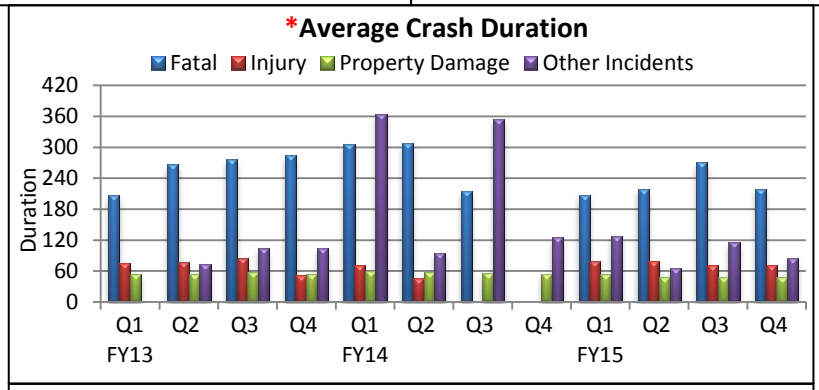
Safety – *Note: Due to a server change. No safety data has been captured since August 2015

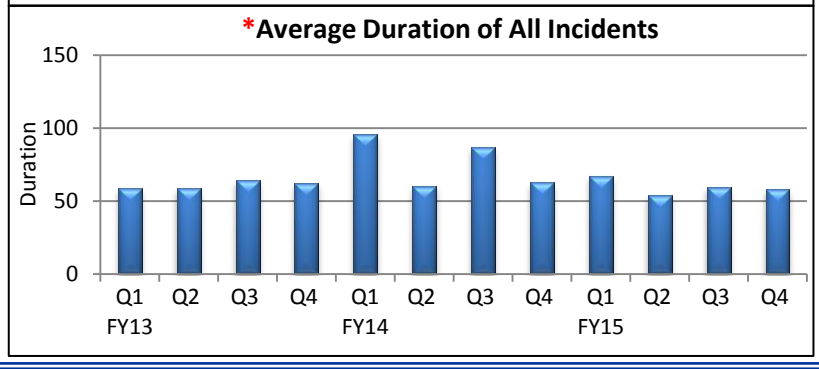
An incident response occurs each time an incident is recorded in the ATMS system. These can be of several types, including crash, construction, debris, stall, congestion, or other. Crashes are separated into three subcategories: property damage, personal injury, and fatal. Each time an incident is created, information is sent to the 511 system, the website, and to the public through email alerts. An incident remains active until it has been completely cleared from the roadway.

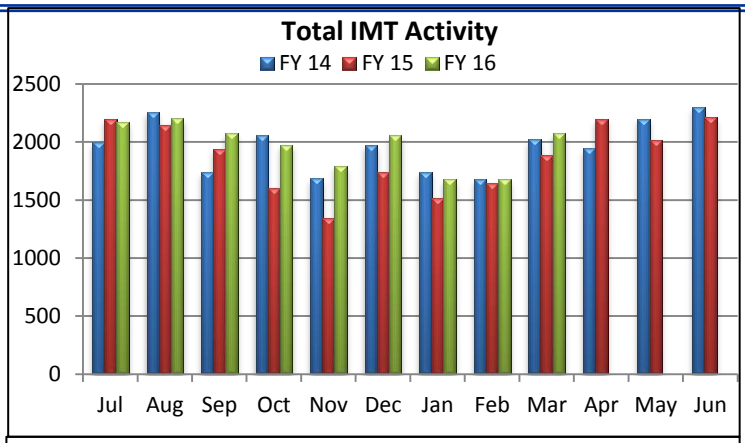


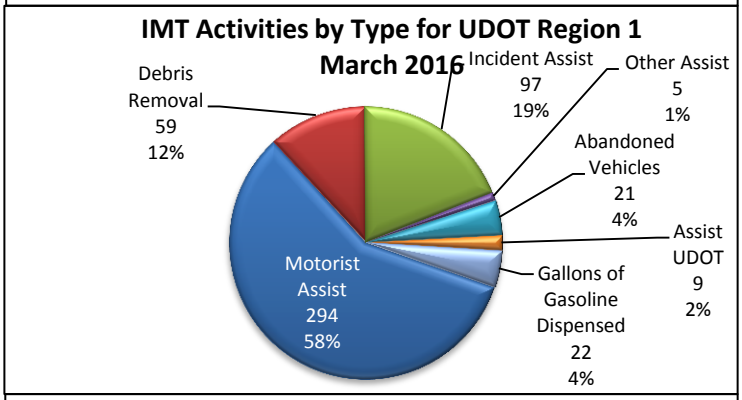


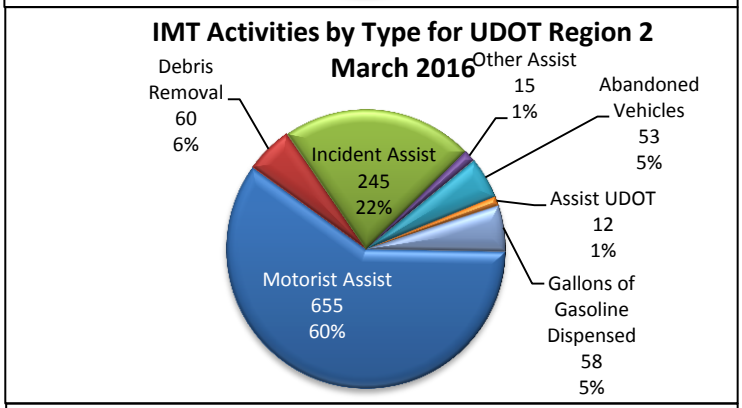


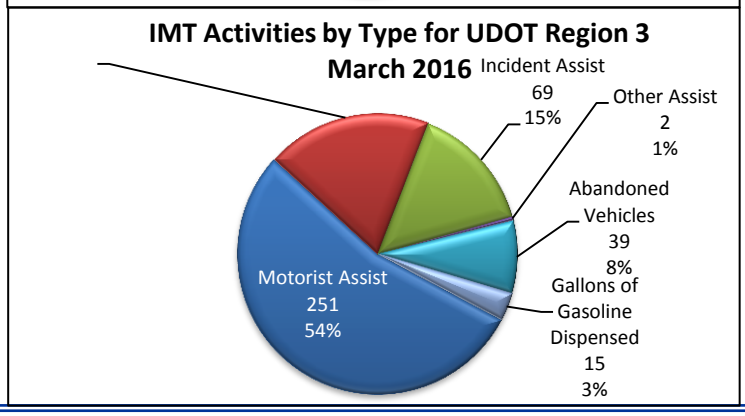





Total IMT Activity
FY 14
FY 15
FY 16
2500
2000
1500
1000
500
0
Jul
Aug
Sep
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun


IMT Activities by Type for UDOT Region 1
March 2016
Debris Removal 59 12%
Incident Assist 97 19%
Other Assist 5 1%
Abandoned Vehicles 21 4%
Assist UDOT 9 2%
Gallons of Gasoline Dispensed 22 4%
Motorist Assist 294 58%


IMT Activities by Type for UDOT Region 2
March 2016
Debris Removal 60 6%
Other Assist 15 1%
Abandoned Vehicles 53 5%
Incident Assist 245 22%
Assist UDOT 12 1%
Gallons of Gasoline Dispensed 58 5%
Motorist Assist 655 60%


IMT Activities by Type for UDOT Region 3
March 2016
Incident Assist 69 15%
Other Assist 2 1%
Abandoned Vehicles 39 8%
Gallons of Gasoline Dispensed 15 3%
Motorist Assist 251 54%

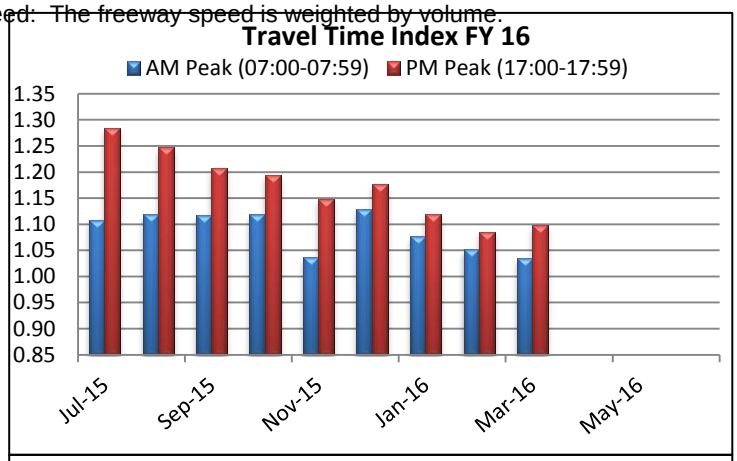
Freeway Traffic Level of Service

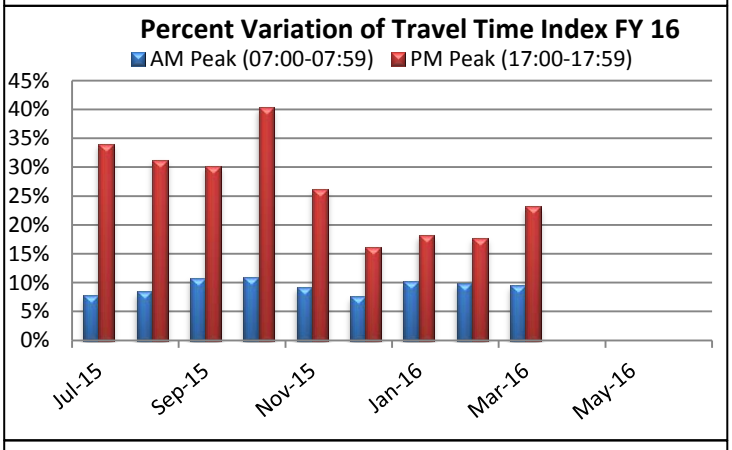
Freeway flow measures are taken from the Traffic Monitoring Stations (TMS) located throughout the Wasatch Front. As more TMS sites are installed throughout the state, they will be included in these performance measures.

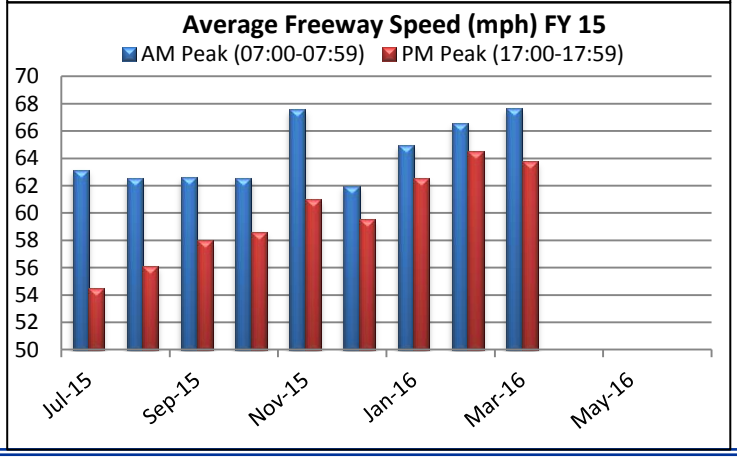
Travel Time Index: This measure of mobility is based on freeway speeds and is weighted by segment lengths and by the traffic volume. A value of 1.0 represents free-flow speeds. A value of 1.12 indicates that the average vehicle trip takes 12% longer than if that were the only vehicle on the freeway.

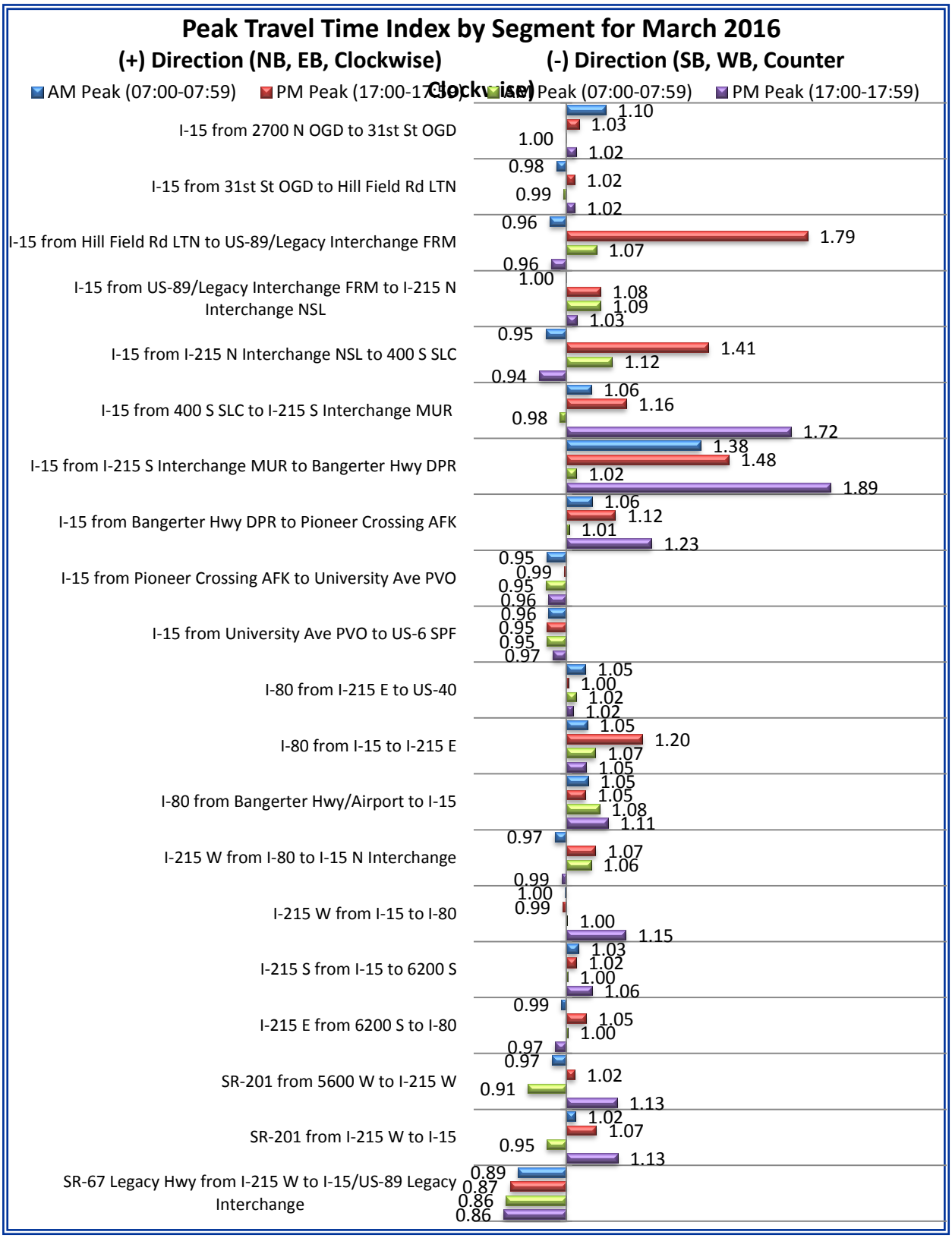
Percent Variation of Travel Time Index: The percent variation in the Travel Time Index is a measure of how much the Travel Time Index changes from day-to-day.

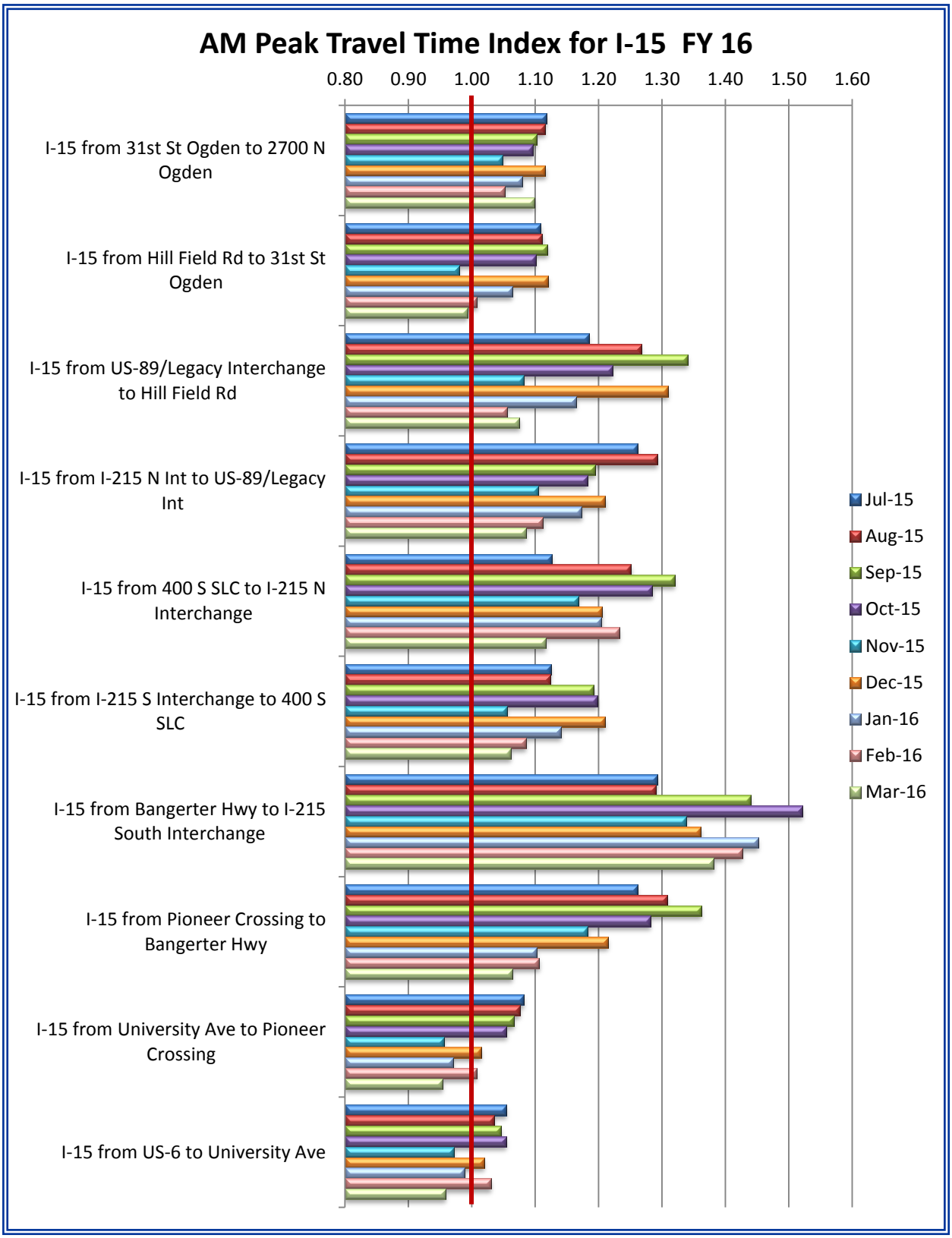
Average Freeway Speed: The freeway speed is weighted by volume.

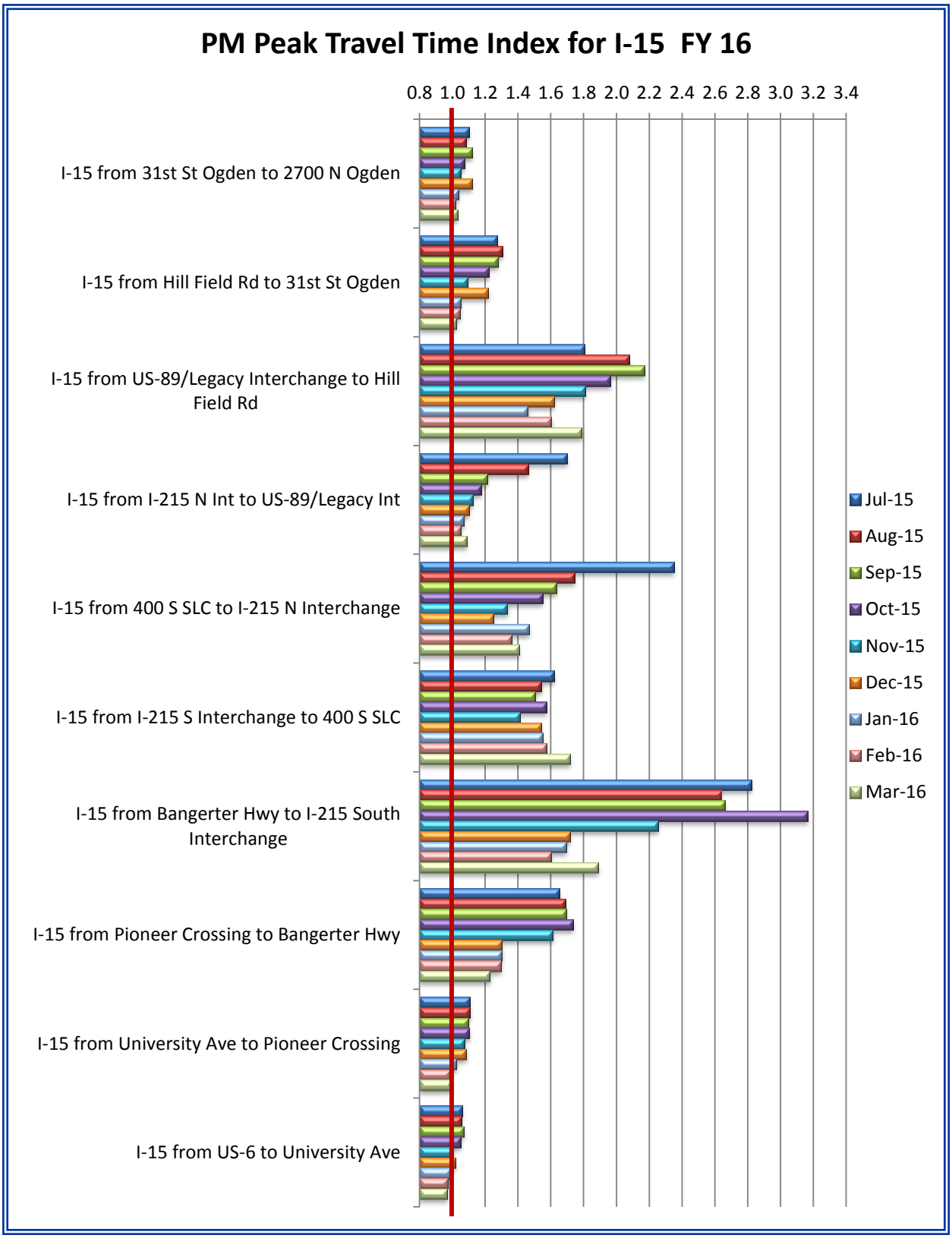


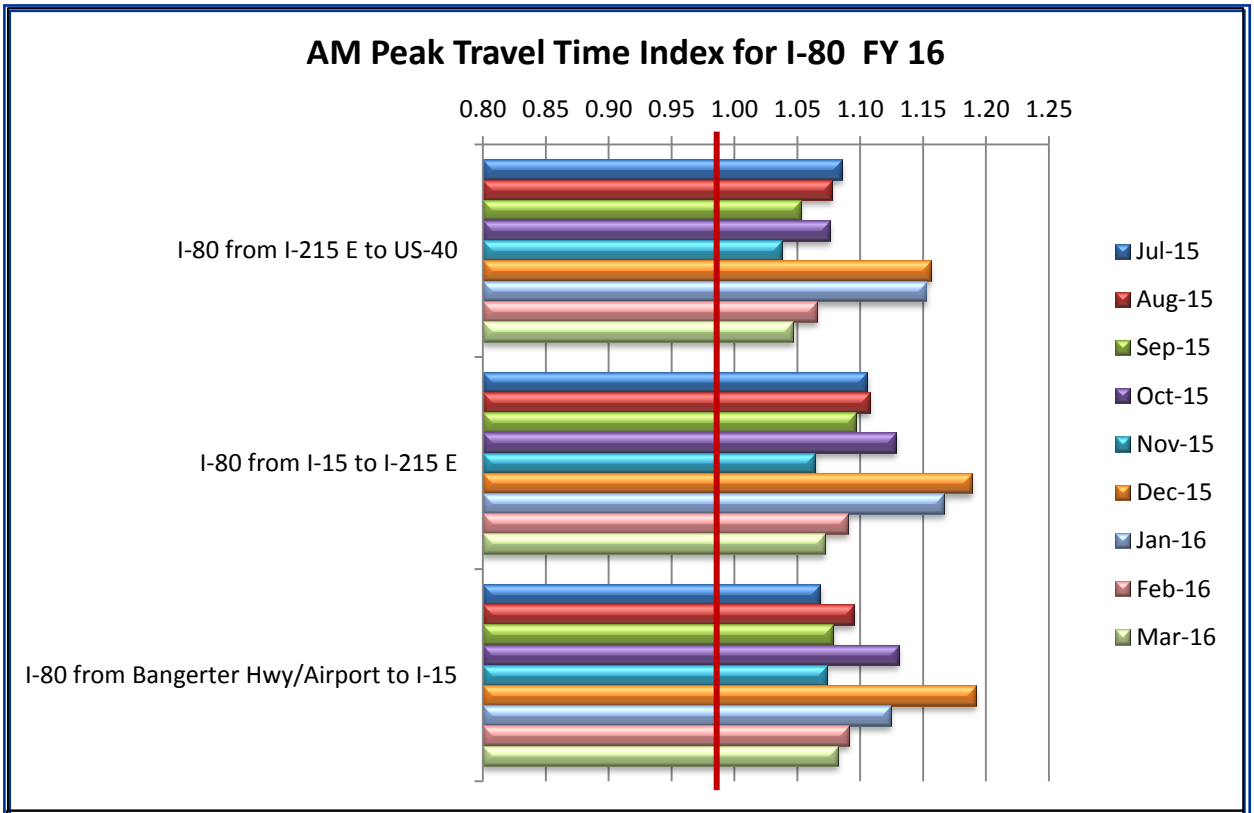


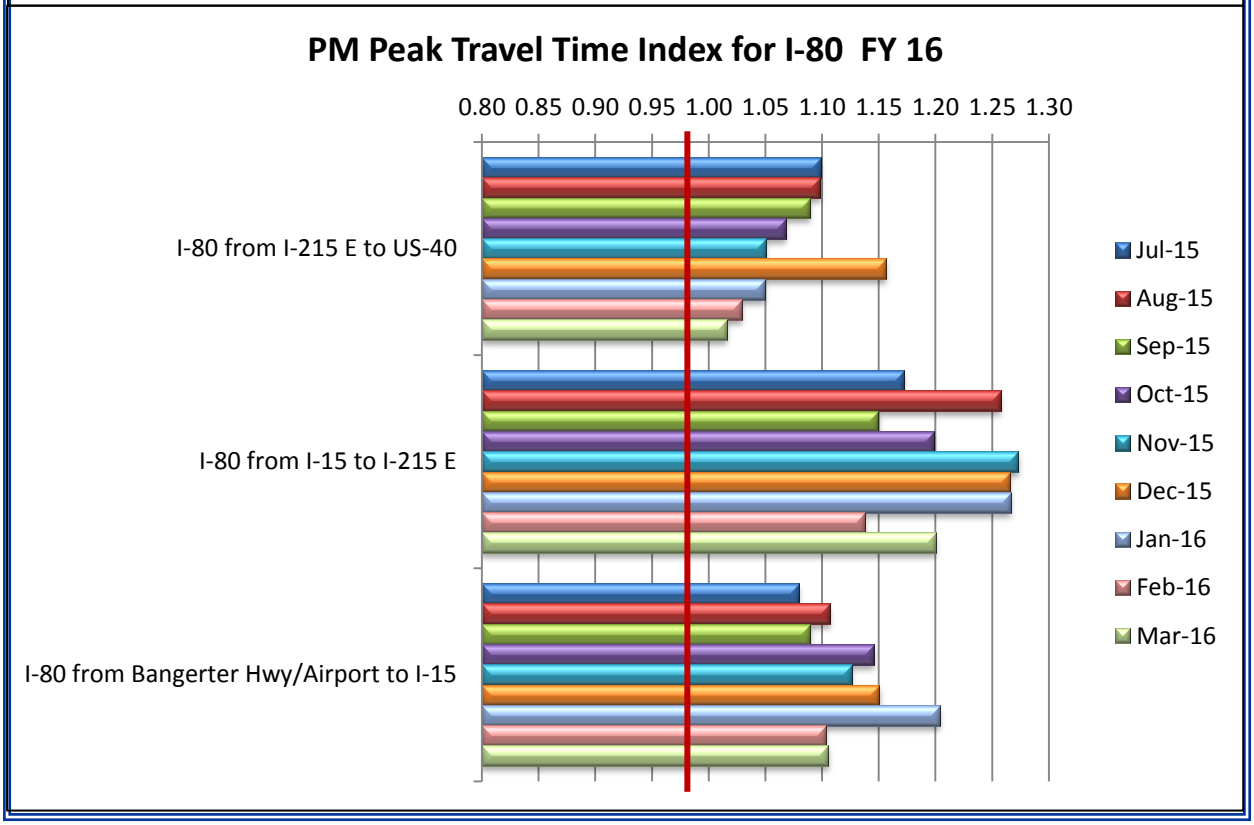


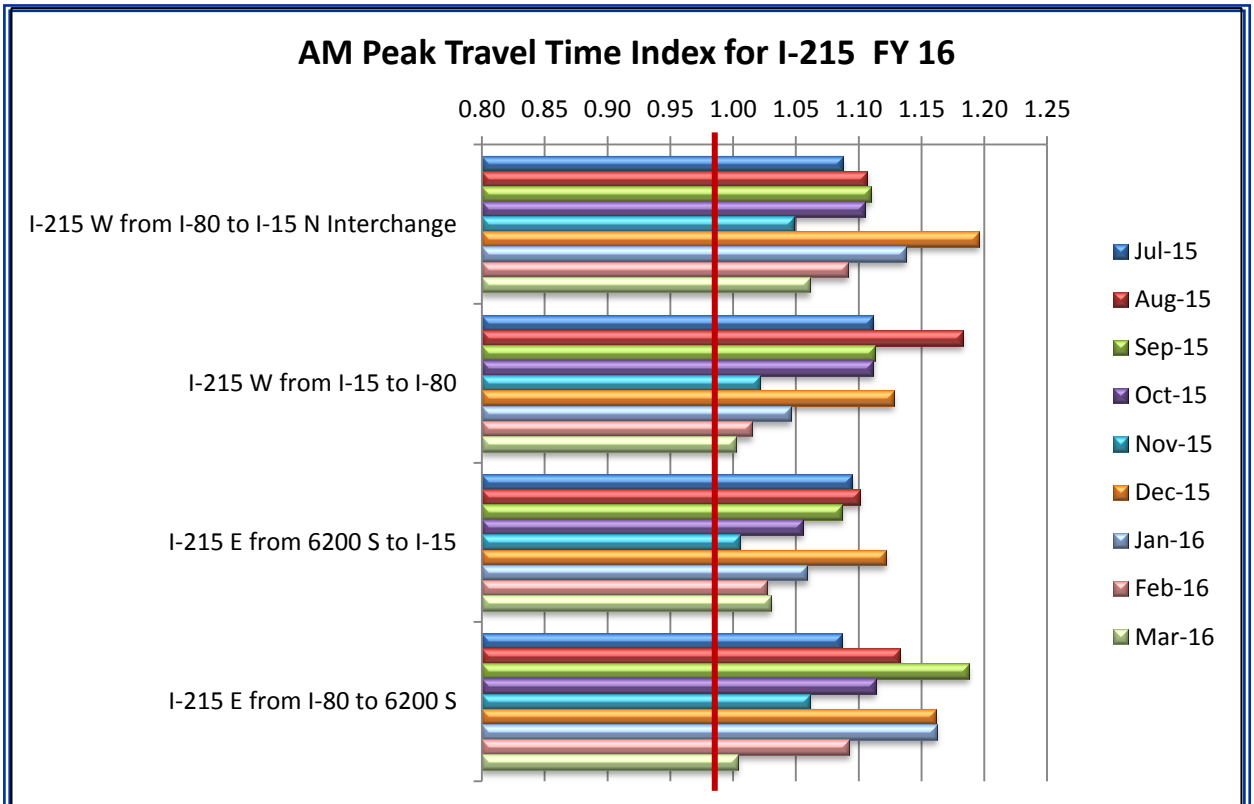

Peak Travel Time Index by Segment for March 2016
(+) Direction (NB, EB, Clockwise)
(-) Direction (SB, WB, Counter Clockwise)
AM Peak (07:00-07:59)
PM Peak (17:00-17:59)
AM Peak (07:00-07:59)
PM Peak (17:00-17:59)
I-15 from 2700 N OGD to 31st St OGD
1.10 1.03 1.00 1.02
I-15 from 31st St OGD to Hill Field Rd LTN
0.98 1.02 0.99 1.02
I-15 from Hill Field Rd LTN to US-89/Legacy Interchange FRM
0.96 1.79 1.07 0.96
I-15 from US-89/Legacy Interchange FRM to I-215 N Interchange NSL
1.00 1.08 1.09 1.03
I-15 from I-215 N Interchange NSL to 400 S SLC
0.95 1.41 1.12 0.94
I-15 from 400 S SLC to I-215 S Interchange MUR
1.06 1.16 0.98 1.72
I-15 from I-215 S Interchange MUR to Bangerter Hwy DPR
1.38 1.48 1.02 1.89
I-15 from Bangerter Hwy DPR to Pioneer Crossing AFK
1.06 1.12 1.01 1.23
I-15 from Pioneer Crossing AFK to University Ave PVO
0.95 0.99 0.95 0.96
I-15 from University Ave PVO to US-6 SPF
0.96 0.95 0.95 0.97
I-80 from I-215 E to US-40
1.05 1.00 1.02 1.02
I-80 from I-15 to I-215 E
1.05 1.20 1.07 1.05
I-80 from Bangerter Hwy/Airport to I-15
1.05 1.05 1.08 1.11
I-215 W from I-80 to I-15 N Interchange
0.97 1.07 1.06 0.99
I-215 W from I-15 to I-80
1.00 0.99 1.00 1.15
I-215 S from I-15 to 6200 S
1.03 1.02 1.00 1.06
I-215 E from 6200 S to I-80
0.99 1.05 1.00 0.97
SR-201 from 5600 W to I-215 W
0.97 1.02 0.91 1.13
SR-201 from I-215 W to I-15
1.02 1.07 0.95 1.13
SR-67 Legacy Hwy from I-215 W to I-15/US-89 Legacy Interchange
0.89 0.87 0.86 0.86

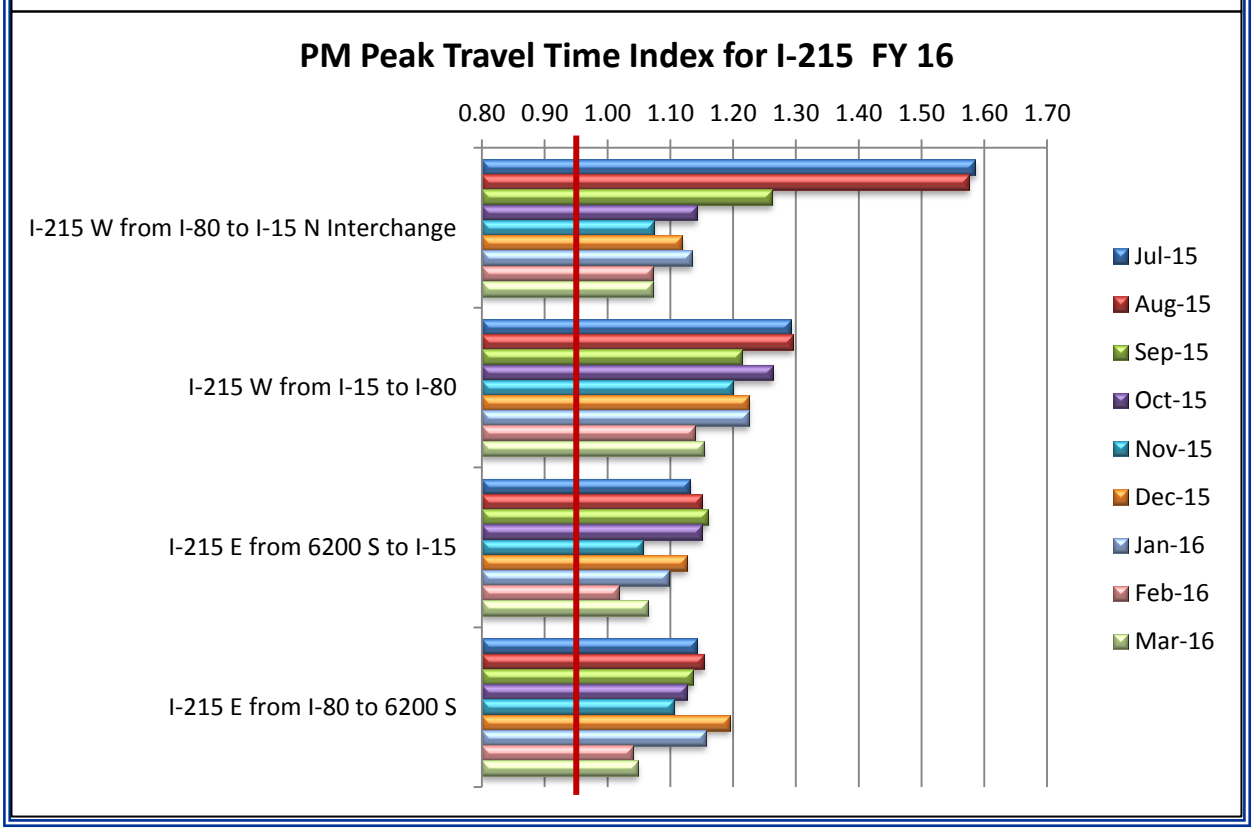

AM Peak Travel Time Index for I-15 FY 16
0.80
0.90
1.00
1.10
1.20
1.30
1.40
1.50
1.60
I-15 from 31st St Ogden to 2700 N Ogden
I-15 from Hill Field Rd to 31st St Ogden
I-15 from US-89/Legacy Interchange to Hill Field Rd
I-15 from I-215 N Int to US-89/Legacy Int
I-15 from 400 S SLC to I-215 N Interchange
I-15 from I-215 S Interchange to 400 S SLC
I-15 from Bangerter Hwy to I-215 South Interchange
I-15 from Pioneer Crossing to Bangerter Hwy
I-15 from University Ave to Pioneer Crossing
I-15 from US-6 to University Ave
Jul-15
Aug-15
Sep-15
Oct-15
Nov-15
Dec-15
Jan-16
Feb-16
Mar-16

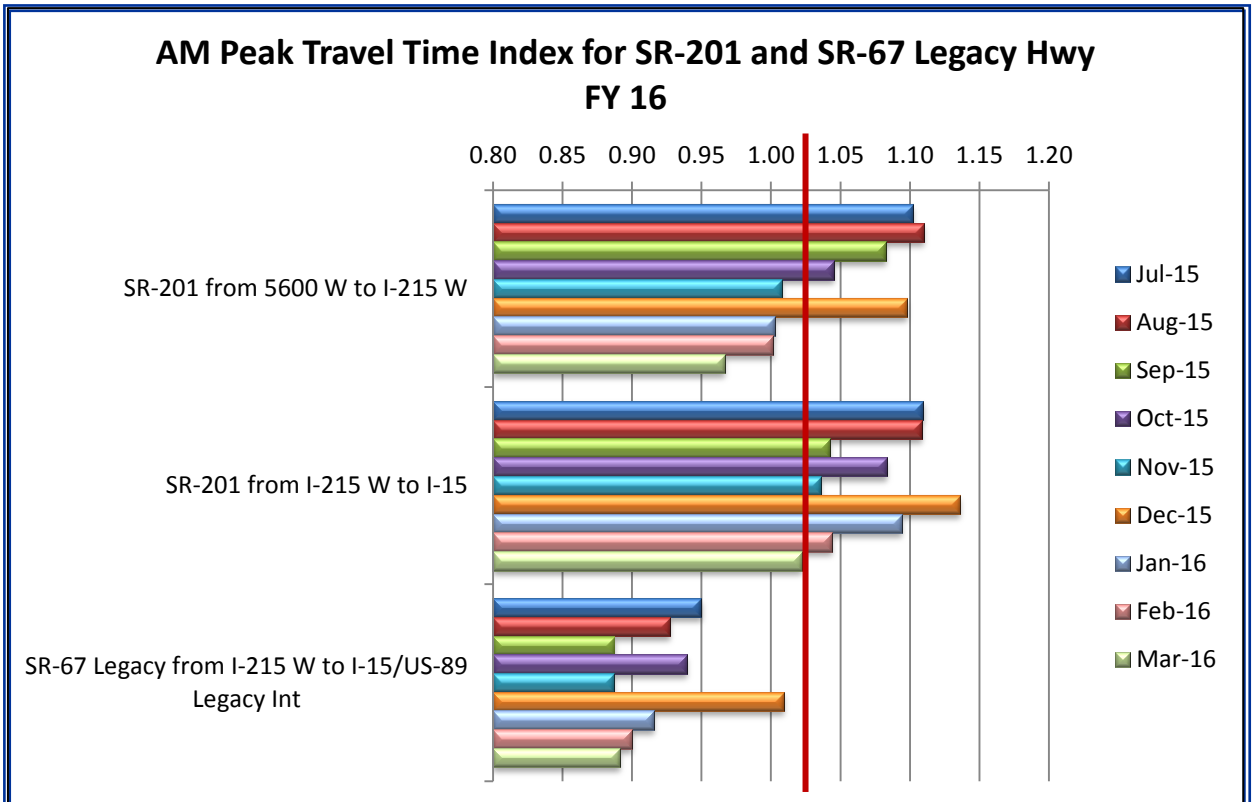

PM Peak Travel Time Index for I-15 FY 16
0.8 1.0 1.2 1.4 1.6 1.8 2.0 2.2 2.4 2.6 2.8 3.0 3.2 3.4
I-15 from 31st St Ogden to 2700 N Ogden
I-15 from Hill Field Rd to 31st St Ogden
I-15 from US-89/Legacy Interchange to Hill Field Rd
I-15 from I-215 N Int to US-89/Legacy Int
I-15 from 400 S SLC to I-215 N Interchange
I-15 from I-215 S Interchange to 400 S SLC
I-15 from Bangerter Hwy to I-215 South Interchange
I-15 from Pioneer Crossing to Bangerter Hwy
I-15 from University Ave to Pioneer Crossing
I-15 from US-6 to University Ave
Jul-15
Aug-15
Sep-15
Oct-15
Nov-15
Dec-15
Jan-16
Feb-16
Mar-16

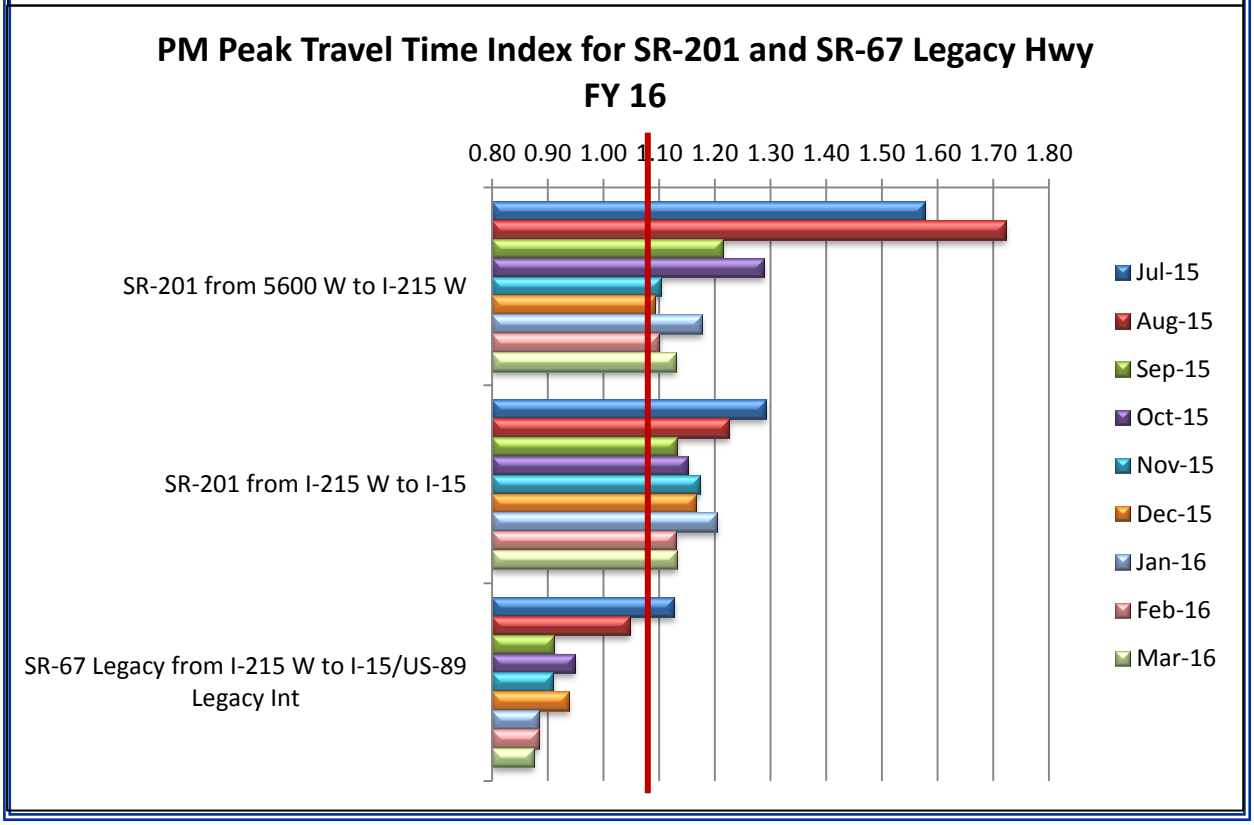

AM Peak Travel Time Index for I-80 FY 16
0.80 0.85 0.90 0.95 1.00 1.05 1.10 1.15 1.20 1.25
I-80 from I-215 E to US-40
I-80 from I-15 to I-215 E
I-80 from Bangerter Hwy/Airport to I-15
Jul-15
Aug-15
Sep-15
Oct-15
Nov-15
Dec-15
Jan-16
Feb-16
Mar-16


PM Peak Travel Time Index for I-80 FY 16
0.80 0.85 0.90 0.95 1.00 1.05 1.10 1.15 1.20 1.25 1.30
I-80 from I-215 E to US-40
I-80 from I-15 to I-215 E
I-80 from Bangerter Hwy/Airport to I-15
Jul-15
Aug-15
Sep-15
Oct-15
Nov-15
Dec-15
Jan-16
Feb-16
Mar-16


AM Peak Travel Time Index for I-215 FY 16
0.80 0.85 0.90 0.95 1.00 1.05 1.10 1.15 1.20 1.25
I-215 W from I-80 to I-15 N Interchange
I-215 W from I-15 to I-80
I-215 E from 6200 S to I-15
I-215 E from I-80 to 6200 S
Jul-15
Aug-15
Sep-15
Oct-15
Nov-15
Dec-15
Jan-16
Feb-16
Mar-16

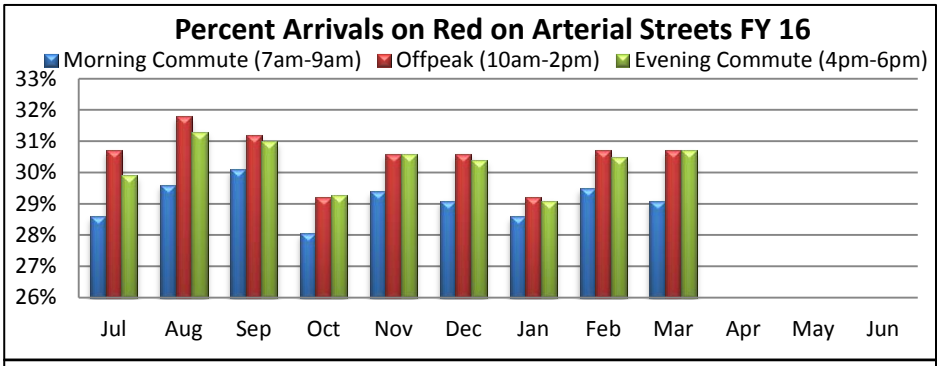

PM Peak Travel Time Index for I-215 FY 16
0.80 0.90 1.00 1.10 1.20 1.30 1.40 1.50 1.60 1.70
I-215 W from I-80 to I-15 N Interchange
I-215 W from I-15 to I-80
I-215 E from 6200 S to I-15
I-215 E from I-80 to 6200 S
Jul-15
Aug-15
Sep-15
Oct-15
Nov-15
Dec-15
Jan-16
Feb-16
Mar-16

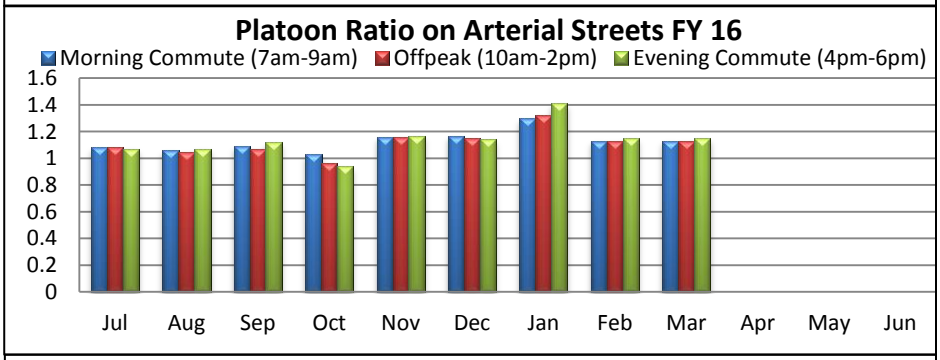

AM Peak Travel Time Index for SR-201 and SR-67 Legacy Hwy
FY 16
0.80 0.85 0.90 0.95 1.00 1.05 1.10 1.15 1.20
SR-201 from 5600 W to I-215 W
SR-201 from I-215 W to I-15
SR-67 Legacy from I-215 W to I-15/US-89 Legacy Int
Jul-15
Aug-15
Sep-15
Oct-15
Nov-15
Dec-15
Jan-16
Feb-16
Mar-16

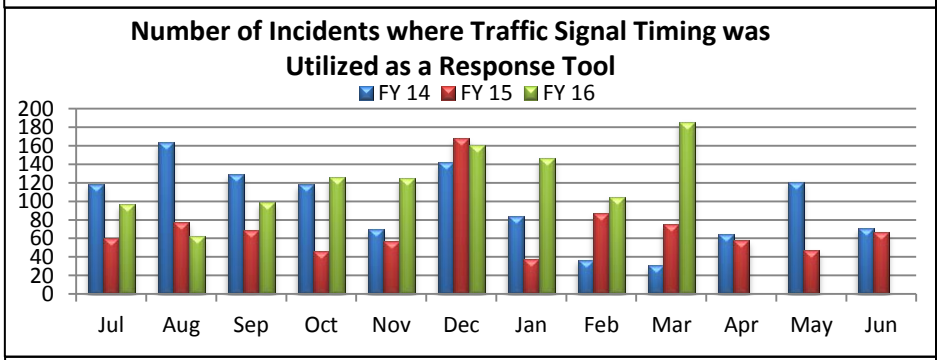

PM Peak Travel Time Index for SR-201 and SR-67 Legacy Hwy
FY 16
0.80 0.90 1.00 1.10 1.20 1.30 1.40 1.50 1.60 1.70 1.80
SR-201 from 5600 W to I-215 W
SR-201 from I-215 W to I-15
SR-67 Legacy from I-215 W to I-15/US-89 Legacy Int
Jul-15
Aug-15
Sep-15
Oct-15
Nov-15
Dec-15
Jan-16
Feb-16
Mar-16

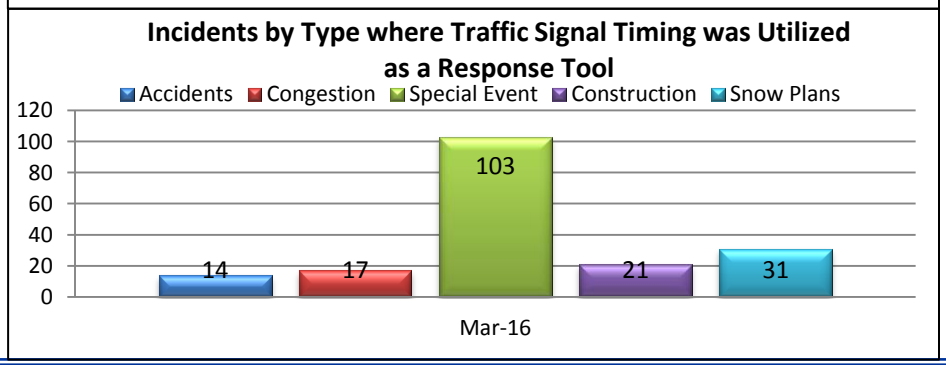
Arterial Traffic Level of Service

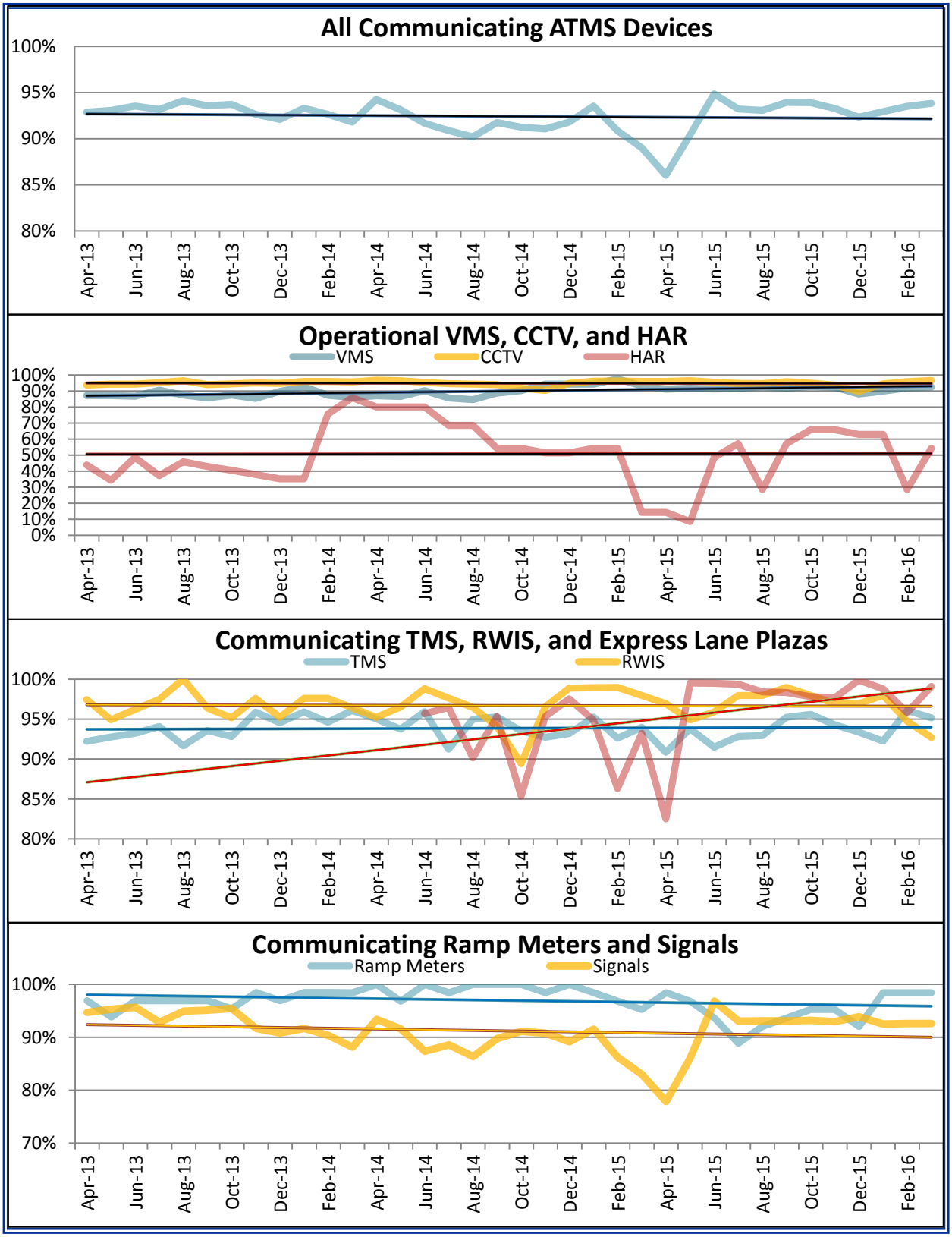
The percent arrival on red along the arterial statistics are generated automatically through the automated traffic signal performance measures, which show real-time and historical functionality at signalized intersections. The system automatically time-stamps when each vehicle arrives at the intersection and then compares the detection time-stamp if the phase was green or red. The percent arrival on red data is averaged over the 24 hours of the day and days in the month. . The lower charts shows the number of incidents where traffic signal timing was modified in order to help traffic flow around closed lanes, or to help relieve excessive congestion.

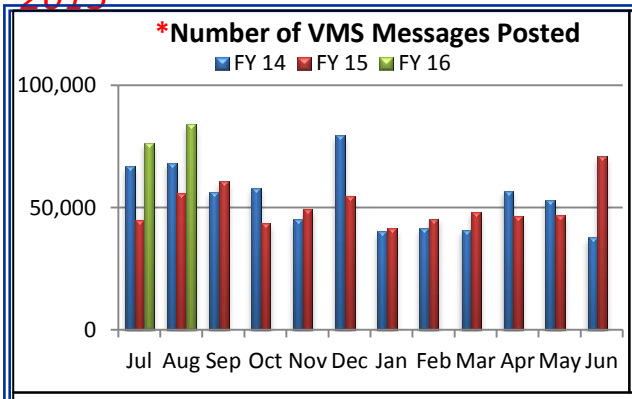


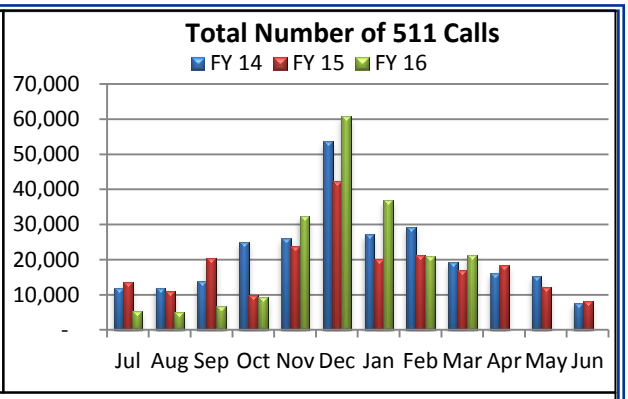


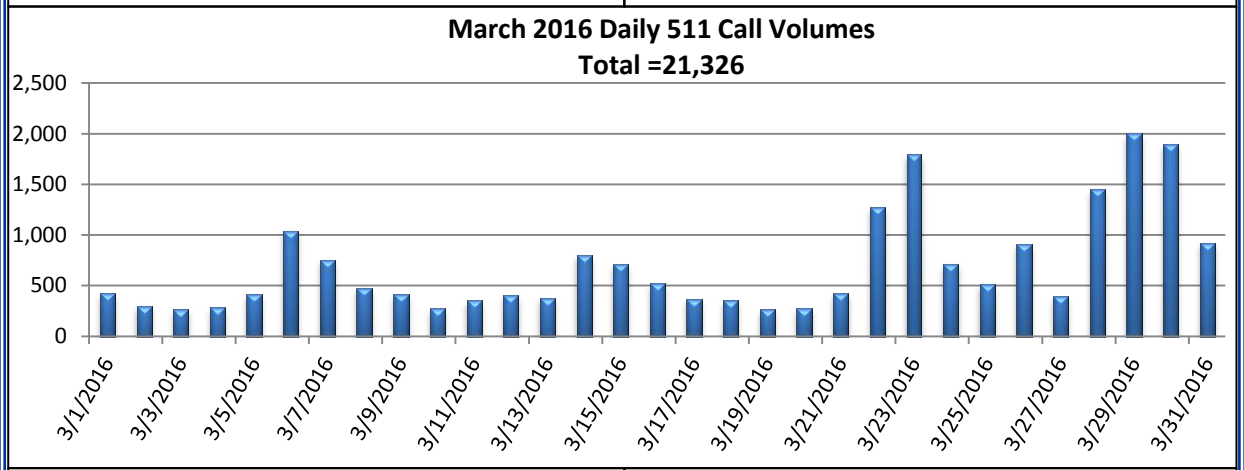


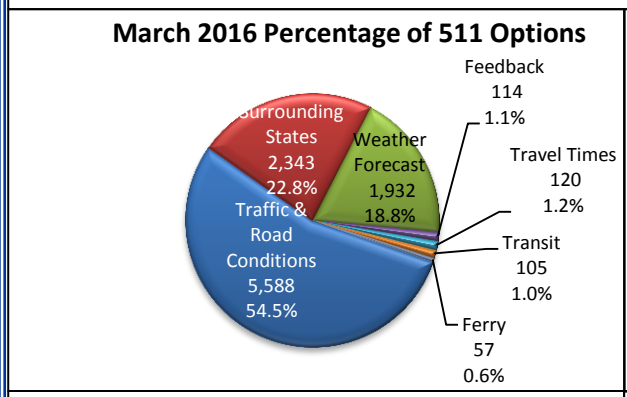


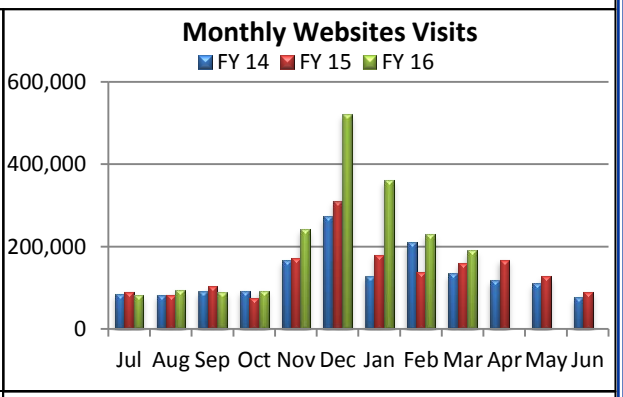

All Communicating ATMS Devices
100%
95%
90%
85%
80%
Apr-13
Jun-13
Aug-13
Oct-13
Dec-13
Feb-14
Apr-14
Jun-14
Aug-14
Oct-14
Dec-14
Feb-15
Apr-15
Jun-15
Aug-15
Oct-15
Dec-15
Feb-16
Operational VMS, CCTV, and HAR
VMS
CCTV
HAR
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
Communicating TMS, RWIS, and Express Lane Plazas
TMS
RWIS
100%
95%
90%
85%
80%
Communicating Ramp Meters and Signals
Ramp Meters
Signals
100%
90%
80%
70%

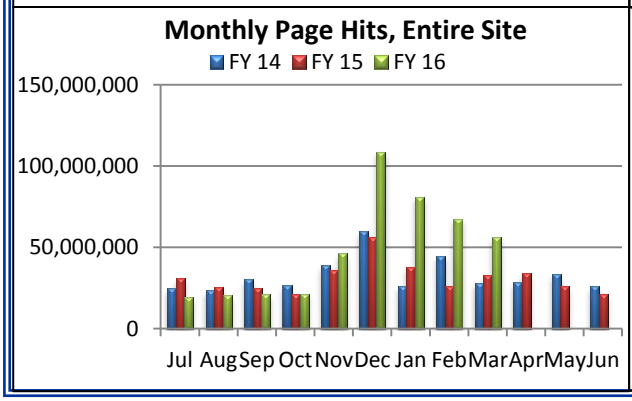

*Number of VMS Messages Posted
FY 14 FY 15 FY 16
100,000
50,000
0
Jul Aug Sep Oct Nov Dec Jan Feb Mar Apr May Jun

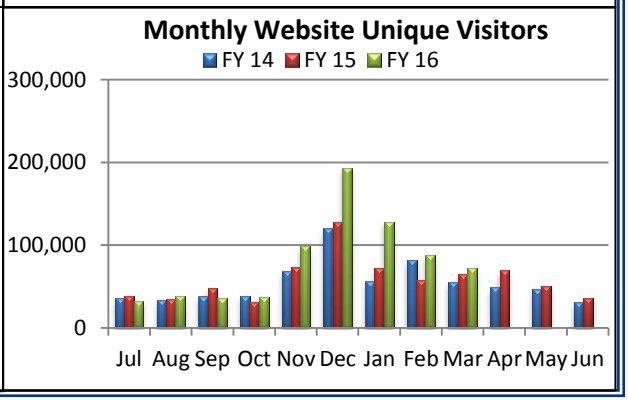

Total Number of 511 Calls
FY 14 FY 15 FY 16
70,000
60,000
50,000
40,000
30,000
20,000
10,000
-
Jul Aug Sep Oct Nov Dec Jan Feb Mar Apr May Jun

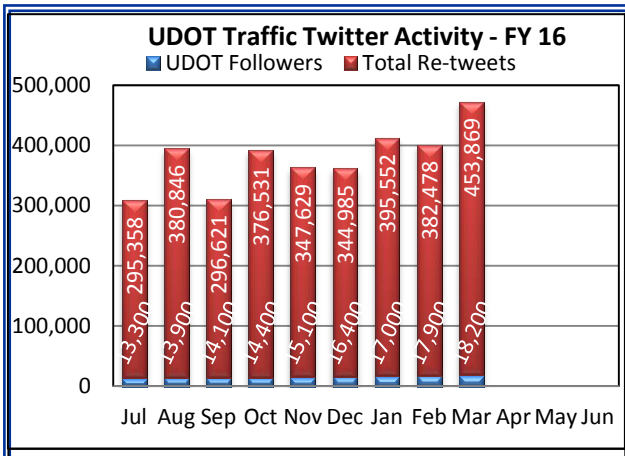

March 2016 Daily 511 Call Volumes
Total =21,326
2,500
2,000
1,500
1,000
500
0
3/1/2016
3/3/2016
3/5/2016
3/7/2016
3/9/2016
3/11/2016
3/13/2016
3/15/2016
3/17/2016
3/19/2016
3/21/2016
3/23/2016
3/25/2016
3/27/2016
3/29/2016
3/31/2016

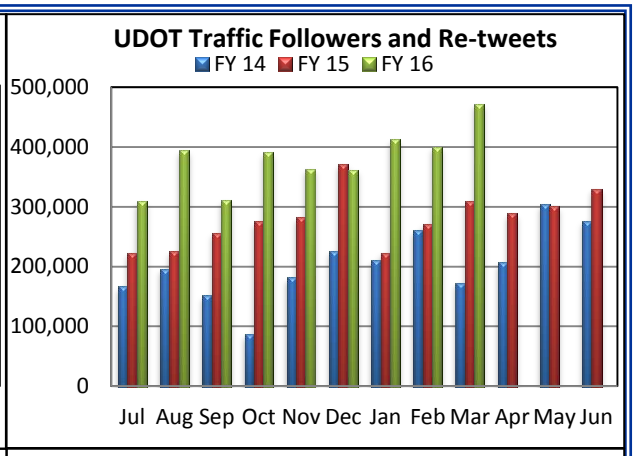

March 2016 Percentage of 511 Options
Feedback
114
1.1%
Travel Times
120
1.2%
Transit
105
1.0%
Ferry
57
0.6%
Weather
Forecast
1,932
18.8%
Traffic &
Road
Conditions
5,588
54.5%

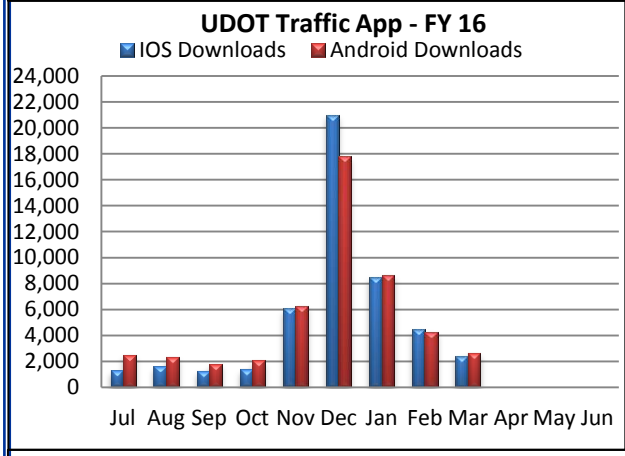

Monthly Websites Visits
FY 14 FY 15 FY 16
600,000
400,000
200,000
0
Jul Aug Sep Oct Nov Dec Jan Feb Mar Apr May Jun

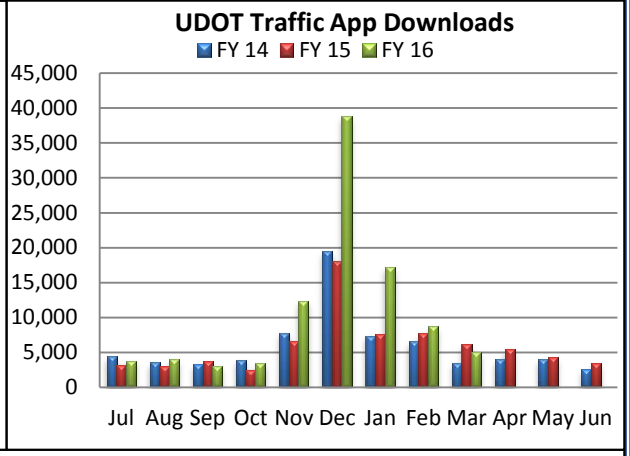

Monthly Page Hits, Entire Site
FY 14 FY 15 FY 16
150,000,000
100,000,000
50,000,000
0
Jul Aug Sep Oct Nov Dec Jan Feb Mar Apr May Jun

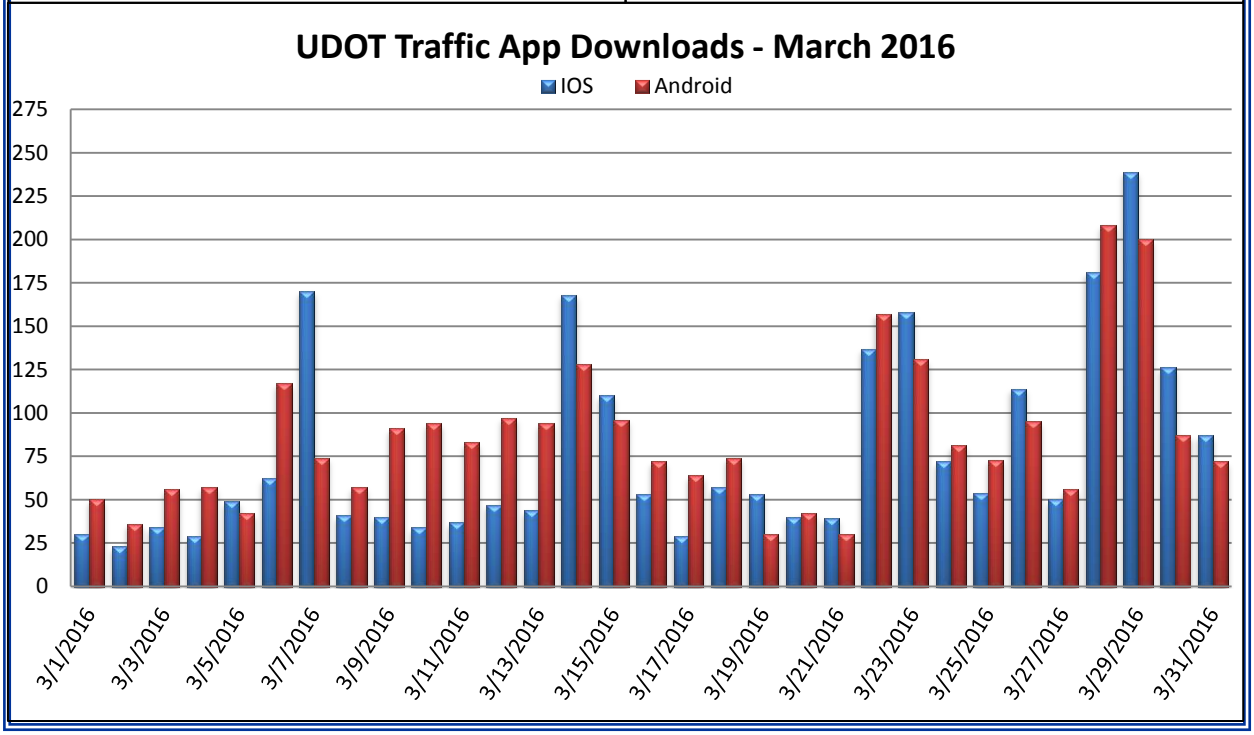

Monthly Website Unique Visitors
FY 14 FY 15 FY 16
300,000
200,000
100,000
0
Jul Aug Sep Oct Nov Dec Jan Feb Mar Apr May Jun

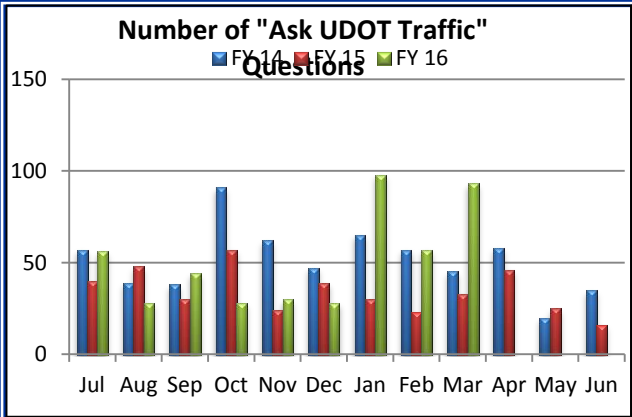

UDOT Traffic Twitter Activity - FY 16
UDOT Followers
Total Re-tweets
500,000
400,000
300,000
200,000
100,000
0
13,300
295,358
13,900
380,846
14,100
296,621
14,400
376,531
15,100
347,629
16,400
344,985
17,000
395,552
17,900
382,478
18,200
453,869
Jul Aug Sep Oct Nov Dec Jan Feb Mar Apr May Jun

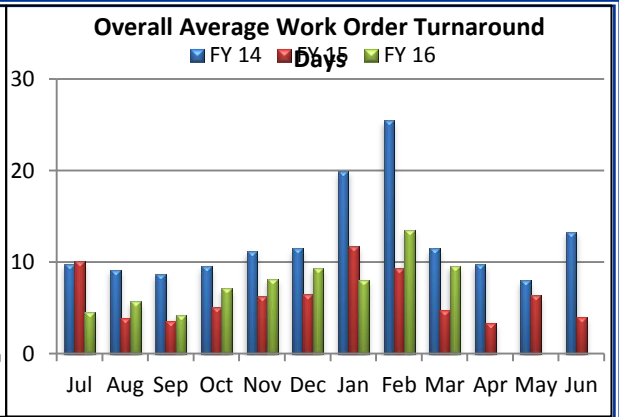

UDOT Traffic Followers and Re-tweets
FY 14
FY 15
FY 16
500,000
400,000
300,000
200,000
100,000
0
Jul Aug Sep Oct Nov Dec Jan Feb Mar Apr May Jun

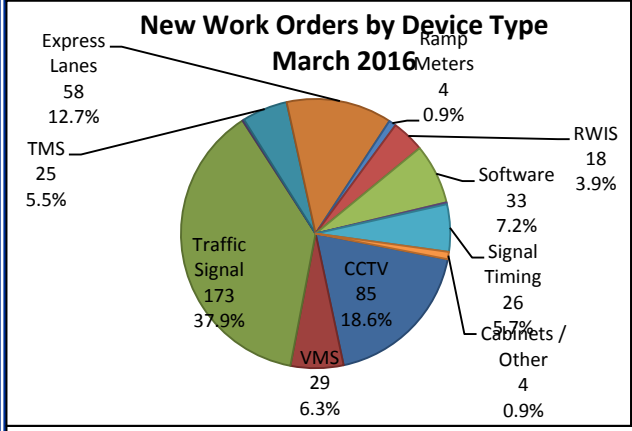

UDOT Traffic App - FY 16
IOS Downloads
Android Downloads
24,000
22,000
20,000
18,000
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
0
Jul Aug Sep Oct Nov Dec Jan Feb Mar Apr May Jun

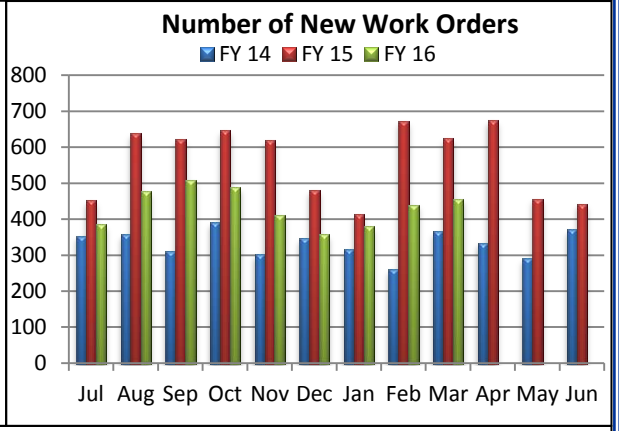

UDOT Traffic App Downloads
FY 14
FY 15
FY 16
45,000
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
Jul Aug Sep Oct Nov Dec Jan Feb Mar Apr May Jun

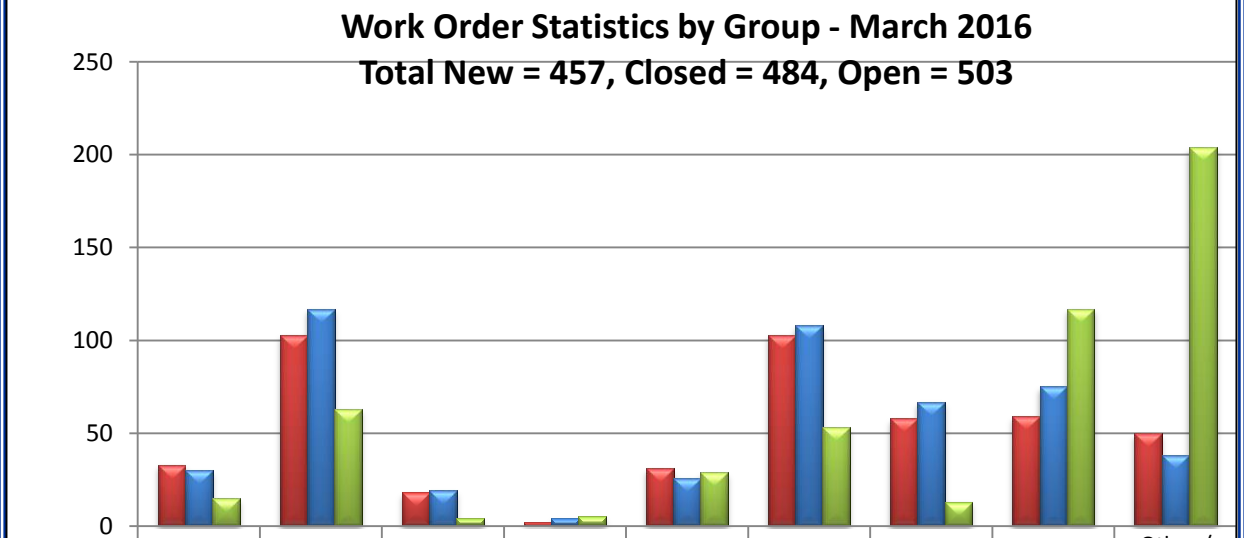

UDOT Traffic App Downloads - March 2016
IOS
Android
275
250
225
200
175
150
125
100
75
50
25
0
3/1/2016
3/3/2016
3/5/2016
3/7/2016
3/9/2016
3/11/2016
3/13/2016
3/15/2016
3/17/2016
3/19/2016
3/21/2016
3/23/2016
3/25/2016
3/27/2016
3/29/2016
3/31/2016











	R1 Signal Maintenance	R2 Signal Maintenance	R3 Signal Maintenance	R4 Signal Maintenance	Signal Timing	ATMS	Express Lanes	ISS	Other / Engineering / Contractor
New	33	103	18	2	31	103	58	59	50
Closed	30	117	19	4	26	108	67	75	38
Open	15	63	4	5	29	53	13	117	204

CONTROL ROOM

The Control Room Operators managed 1173 incidents and handled 1239 phone calls, in addition to common daily tasks of posting VMS messages, emergency alerts, 511 messages, monitoring events, adjusting signal timing plans and registering work orders for ATMS maintenance. Message Monday's and other PSA messages were active throughout the month. Air Quality alerts were also posted for several days throughout the state during March.

Traffic Operations Center Liaison was activated seven times in the month of March for various incidents.

The control room staff supported law enforcement and security for the presidential candidates coming to Utah just prior to the Utah Political Caucuses in March. Of particular note, The TOC helped distribute traveler information and activated a TOCL during the Donald Trump rally and counter-protest that resulted in several impromptu road closures in Salt Lake, requiring traffic signal plans be changed continuously during the event.

The TOC supported the Holi Festival of Colors in Spanish Fork, the Moab Jeep Safari, and the Fan Xperience SLC Comic Con with traveler information and messaging.

Kurt Lauer joined the control room operators in March, and is a welcome addition to the team.

TRAVELER INFORMATION

Traveler Information staff represented UDOT at the March I-15 Alliance multi-state meeting to discuss traffic management. Managed the UDOT wide initiative clarifying the Chain-UP law for the travelling public. The UDOT TMD National Park traffic management visit was coordinated. Discussion began with UDOT Internal Communications regarding TOC outreach and assistance was given to UDOT Communications with an RFP review.

WEATHER INFORMATION

The UDOT Weather Group had 380 overall weather interactions, 106 outgoing weather alerts, 13 NWS collaborations, and 16 road weather alerts.

Climatology

Overall statewide average temperatures were above normal, with the average mean temperature at the Salt Lake City airport 3.5 degrees above normal. Northern Utah experienced above normal precipitation. However, Southern Utah saw below average precipitation.

Weather Operations

The Weather Group hosted a few tours in March, and hosted two civil engineering students from Purdue University to discuss implementing weather information into their traffic delay measures.

A new RWIS on I-15 at Pine Creek Hill *(MP 125.5)* came online during the month.

TRAFFIC OPERATIONS AND REPORTING

The Traffic Operations and Reporting Team was involved in:

- The Provo/Orem BRT.
- Governors performance metric.
- I-215 pavement project.
- Traffic & Safety coordination.
- SR-201/I-215 interchange.
- I-15 9000 South to I-215 weave analysis.
- 9000 South analysis.
- Pleasant Grove Blvd access analysis.
- Moab Main Street.
- Congestion reporting.
- Indiana traffic ticker.
- Worked with student interns from Purdue University.
- 4700 South/2700 West signal improvement.
- Transit signal priority.
- Managed motorways.
- I-15 corridor modeling WFCCS.
- 600 West Bangerter DB project evaluation.
- Lehi Main Street access discussion.
- Mountain View Corridor safety.
- LDS Church development at Thanksgiving Point access analysis.
- American Fork DDI - Pioneer Crossing operational improvements.
- The UTRAC workshop.

ITS ASSET MANAGEMENT

The ITS Asset Management Team integrated twelve new CCTV, one RWIS site, two avalanche warning VMS and seven signals.

The team also continued participating in updating standard drawings and specifications and began managing the freeway lighting maintenance contract.

TRAFFIC SIGNAL OPERATIONS

Region 1

Mack Bankhead was hired to replace Dale Lake, who recently retired.

Region 2

Several intersections were added to the Signal Performance Measures program.

Region 3

Turned on new signals at SR-73 & Mt. Airey in Eagle Mountain, US-40 & 1500 E. in Ballard, a HAWK signal at US-40 & 250 S. in Heber; a new overhead flashing warning pedestrian system at US-40 &100 N. in Heber; an EB FYA left turn and replaced all of the boxes and signal heads at SR-75 & 1400 N. in Springville; NB & SB FYA left turns at 700 N. & North County Blvd. in American Fork; replaced a pedestrian pole and signal head that was knocked down at 800 N. & I-15 SPUI in Orem; ran special event timing plans for several BYU basketball games; modified detection for construction projects in Heber and Saratoga Springs; installed generator transfer switches in several signal cabinets in Spanish Fork and Heber; and installed reflective back plate tape at several signals throughout the Region.

Region 4

Generator transfer switches were installed at several cabinets throughout Region 4. Several ground faults were repaired on the street lighting system. Back plate tape was installed in Hurricane and the replacement of aging LED traffic signal lights has begun.

The team developed a first of its kind adaptive traffic signal system in Moab. Moab traffic patterns have been very difficult to manage because Moab Main Street is the main tourist destination and lodging hub in Southeastern Utah, as well as lying on the major truck corridor that connects Gulf Coast industrial transportation needs to Salt Lake and points north and west. This is a decades old battle, balancing tourism and pedestrian demands with some of the greatest long haul truck traffic in a growing recreation area.

The team, using spinoff benefits from the Signal Performance Measures program, improved fiber communication, improving signal controller technology and about four weeks staff time, developed working methodology that changes signal cycle length and green time allocation based on live traffic demand. Praise to Matt Luker, who leads the team with balancing long haul trucking needs along Main Street and tourism needs to easily cross a major truck corridor – both a safety and economic boost to the area.

ATMS MAINTENANCE

Field Team

The Field Team revisited four I-15 South Davis project ATMS sites and found all sites needed additional work before they could be integrated. The team began repairing state furnished equipment associated with this project so the ATMS sites can be brought on line. They also performed an LFOT on SR-73 at Mt. Airey Drive and closed 76 work orders.

Lab Team

The Lab Team tested and repaired 28 ATMS devices, burned in two refurbished signal cabinets, delivered three signal cabinets, and out-loaded a VMS for a project in Salina. The team repaired two variable speed limit signs that were damaged during snow removal over the winter and troubleshot and replaced a power transformer in Parleys Canyon.

The team performed three LFOT's, completed preventative maintenance inspections on ten TMS sites and all five mobile HAR's. A modem was replaced in a portable VMS and 24 work orders were closed.

Express Lanes Team

The Express Lanes Team closed 58 work orders, rebooted four VTMS and eight lane controllers. One reader was reset, twelve lane controllers were repaired and configured, and 15 cabinet PM's were performed. The team replaced two sets of Sensys pucks, recalibrated eight sensors, changed the mode of one sensor, replaced four UPS batteries, and performed six lane PM's. Repaired one twisted TSI head and replaced three fiber switches.

FREEWAY OPERATIONS

The Express Lanes Team replaced the original computer servers that operate the Express Lane system. The old servers had reached end of life and were not robust enough for the increased demand of the soon to be completed South Davis Express Lane Project. The new servers will ensure the Express Lanes will operate for the next five to seven years.

The Utah Transportation recently asked the C-Decals be edited to eliminate personal information. March saw the replacement process begin with 1,400 of the 5,000 C-Decals sent to existing permit holders. This replacement effort will take three or four months to complete.

Region 1

- **Statewide Signal Interconnect:** PineTop Engineering has been working on the design for this to advertise.
- **28th Street and Washington:** Under construction.
- **SR-126 & 1300 N:** Under construction.
- **I-15; SR-30 to the Idaho State line:** This project has been designed by PineTop Engineering and is ready to advertise. This project needs major funding for ATMS. This project may be part of a partnership with a telecom.
- **Layton Interchange:** This project is in design.
- **SR-127 & 3000 W:** Under construction.
- **US-89; Antelope Drive Extension:** This project is under construction.

Region 2

- **SR-201 New Cameras at I-215 W:** Construction began to install two new cameras in the interchange. One on the East and West side of I-215 West. Construction should be complete and the new cameras brought online in April.
- **Travel Time Detection at I-215 West at I-15:** The conclusion of the legislative session changed a crucial law about using Bluetooth technology in methods that support our effort to obtain travel time. We are looking at modifications to the completed design to support Bluetooth on some of the traffic monitoring sites to enhance and improve the travel time measurement.
- **Managed Motorway Concept – Detection Device test:** In an effort to support the managed motorway design concept, we are testing the detection device needed for the advanced measurements required. The Infra-Red Traffic Logger (TIRTL) is a small roadside detector unit that needs a transmitter on one side of the road and a receiver on the other side that use two parallel eye beams that stream across the surface of the road. The eye beams detect the 'break' and 'make' of the eye beam as the tire passes through the beam. The device can determine the vehicle type, speed, and lane of travel. We will be working with the vendor and a local consultant to purchase the unit, setup in a test section of the freeway, and integrate the unit to communicate back to the TOC. This test will happen this spring and we will be able to expand the test to new locations needed for verification of performance.

Region 3

- **SR-92 CCTV/Hybrid VMS (12641):** Negotiating with contractor to repair wind storm damage so we can restart the 30 day burn-in.
- **Saratoga Springs; Pony Express; SR-68 to 800 West (8581):** Project complete.
- **Region 3 traffic signal connections (12774):** Approved design to connect three signals; SR-198 @ Woodland Hills + CCTV, SR-198 @ 400 North, and SR-198 @ Main St + CCTV in Salem via wireless radio connection.
- **US-40 CCTV/signal connections (12805):** STRATA installed connection electronics to eight signals in the basin area. Waiting for hub equipment order to arrive to connect STRATA to the Kearns Building in downtown Salt Lake.
- **Provo Canyon RWIS/VMS (11410):** Installed modem at solar VMS sign. Began 30 day burn-in.
- **US-189; State Park to Rock Cut passing lanes (11415):** Project awarded.
- **Fiber connection to three maintenance sheds (13681):** 30 day burn-in complete. Scheduling training.
- **Spanish Fork; SR-156; 300 South to M.P. 2 (9976):** City decided to add a waterline installation change order. ATMS installation anticipated in May.
- **Provo; SR-256; 800 East to University Ave BRT (10266):** ATMS design of micro fiber and two CCTV's ongoing.
- **Spanish Fork; Canyon Rd @ 2550 E Signal (10960):** Project awarded.
- **Provo; US-89 (300 S); 100 East to 700 East (10137):** Project under construction.
- **Heber; US-40; 250 South HAWK & 100 North Ped X-ing (14105):** Under construction.
- **Lindon; US-89 @ Center St. (12839):** Integration completed. Started 30 day burn-in.
- **Utah County Signal Interconnect (13244):** Held Plan-in-hand.
- **Eagle Mountain; SR-73 @ Mt. Airey Dr. (14163):** Project complete. Began 30 day burn-in.
- **Eagle Mountain; SR-73 @ Sunset Dr. (13217):** Project in design.
- **I-15 Fiber; Payson to Santaquin (14149):** Started design contract negotiation.

Region 4

- **Pine Creek Truck Climbing Lane:** This project is nearly complete.
- **Fiber upgrade for US-6, Helper and Price Signal Integration:** Telecom work has been completed. UDOT is ready to complete the final contractor package for a procurement contract. The package is ready and meetings with Region 4 staff have been scheduled to make sure all certifications and checklists have been satisfied.
- **Beaver Truck Climbing Lane:** Project is under construction.
- **I-15; North Beaver to Manderfield:** This project is complete. Solar sites and CCTV locations to be re-located are being mitigated.
- **Cedar City Fiber:** Cache Valley Electric has been awarded the project.
- **Beaver Shed and Fiber HUB:** We have received bids from three contractors and have awarded the contract to Hidden Peak Electric. Due to weather they are looking at April to begin.

ITS Standards and Specifications

- The kick off meeting was held to begin the “non-electrical” review of the ATMS Standards for the 2017 edition. All members of the TOC staff and Q/C team attended. All specifications and drawings will be examined in order to improve the ATMS construction.

- A meeting was held to examine the differences in electrical specifications within 02892 traffic signals, 13551 ATMS general requirements and, 16525 highway lighting. Meeting attendees included electricians from Lighting and ATMS, electrical engineers from Narwhal, traffic engineers from O’Neil Group and TOC engineers. The meeting objective was to discuss the differences and what do with them. It was determined that a new standard specification would solve the inconsistencies. This concept was presented to George Luke’s specification unit and approved. The new standard is 16530 electrical power. Narwhal Group will divide the electrical portions of 02892, 13551 and 16525 and place them into 16530. The draft specifications are scheduled to arrive by mid-April.

- Work continued to revise the Freeway Management portion of the AT Series Standard Drawings. A consolidation of the drawings is underway to reduce and re-organize the drawings series.

- Work continued on the ATMS Solar Powered Site Standards. General Arrangements were examined and refinements under consideration. Horrocks provided drawings and specifications from the Pine Creek Climbing Lanes project.

- The final flow chart for pull box lid description was completed. The flow chart will be advanced to the Standards Group for opinion and comment in April.

Procurement

- Work commenced on developing the new RWIS instrumentation contract bid documents.

- Research work was done to find costs of the Vicon IP CCTV dome camera, COHU hybrid positioner camera, and Pelco hybrid dome and positioner cameras. Pelco discontinued manufacturing the hybrid series in favor of straight IP data transmission. Hybrid technology allows the CCTV camera to transmit video data via analog and IP formats. COHU appears to be the only manufacturer that makes hybrid technology.

- **TOC CCTV Technology**: The TOC uses analog CCTV cameras typically connected to Teleste encoders placed in ATMS cabinets in the field. The TOC is researching how to integrate newer IP CCTV cameras into our outdated projector wall that operators view within the TOC. IP CCTVs have a built in "IP encoder" that increases the cost over analog cameras unit for unit. However, the analog camera needs the additional cost of the Teleste IP encoder in order to send video data to the TOC. The TOC is interested in hybrid camera technology because it can be deployed (at additional costs) and integrated into the TOC CCTV system using the analog format. Then, when the TOC video wall is updated, the hybrids could be switched to transmit IP video data. This would allow the TOC to install convertible IP cameras instead of the analog cameras it is currently installing. Therefore, cost research is underway.

©Steve Kelley and Jeff Parker.

Acronyms

CCTV	Closed Circuit Television	DPS	Department of Public Safety
EIS	Emergency Information System	HAR	Highway Advisory Radio
I2TMS	Integrated Interagency Traffic Management System		
ITS	Intelligent Transportation System	LFOT	Local Field Operations Test
MIC	Manager in Charge	MOT	Maintenance of Traffic
RWIS	Road-Weather Information System	TAC	Technical Advisory Committee
TMD	Traffic Management Division	TMS	Traffic Monitoring Station
TOC	Traffic Operations Center	VMS	Variable Message Sign

UDOT Keeping Utah Moving